

may appear a small matter. It is not. Besides being a gratuitous untruth, it suggests a habit that is beyond credibility. Besides never seeing it done, two seasons of close study of nesting Sparrow Hawks lead me to believe that no mother hawk of this species would be willing to approach the nest carrying insect food.

The case just cited calls to mind another class of people that may be mentioned: They are "half-castes" or hybrids between the old school and the new school of ornithology. With a smattering knowledge of a few birds they are busy trying to whitewash the reputations of certain birds proved to be bad. While they deify a bird they are at great pains to damn the characters of the people who have made known its evil habits. They forget that time is long; that after them will come bird students and ornithologists who will recognize the truth and forcibly denounce the errors and untruths in which these mongrel "half-castes" delight to revel.

NATIONAL, VIA MCGREGOR, IOWA.

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## THE NESTING WRENS OF BROOKE COUNTY, WEST VIRGINIA

BY GEORGE MIKSCH SUTTON

*Illustrated with three halftone drawings by the author.*

During the past fifteen years three species of the family Troglodytidae have been known to nest in the vicinity of Bethany, Brooke County, West Virginia. The Carolina Wren (*Thryothorus ludovicianus ludovicianus*)<sup>1</sup> is certainly the most noticeable of the three because it lives the year round near towns and farms, its loud, brilliant song is to be heard at virtually all seasons, and its size and dominant personality attract attention everywhere. The summer resident House Wren (*Troglodytes aedon aedon*)<sup>1</sup> while not so widely distributed, nor actually so common, is perhaps better or more accurately known, partly because of its ready acceptance of nesting-boxes erected for it, and partly because the average person can identify "Jenny" Wren without much difficulty. The Bewick's Wren (*Thryomanes bewicki bewicki*)<sup>1</sup> is very rare, has never nested about the towns so far as I know, and is unknown among the people of the countryside where it should occur. The Bewick's Wren may be a permanent resident wherever it is found in this latitude. The fluctuation in the wren population in Brooke County has greatly interested me.

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<sup>1</sup>Specimens have been collected and compared for determination of the subspecific form.

## CAROLINA WREN

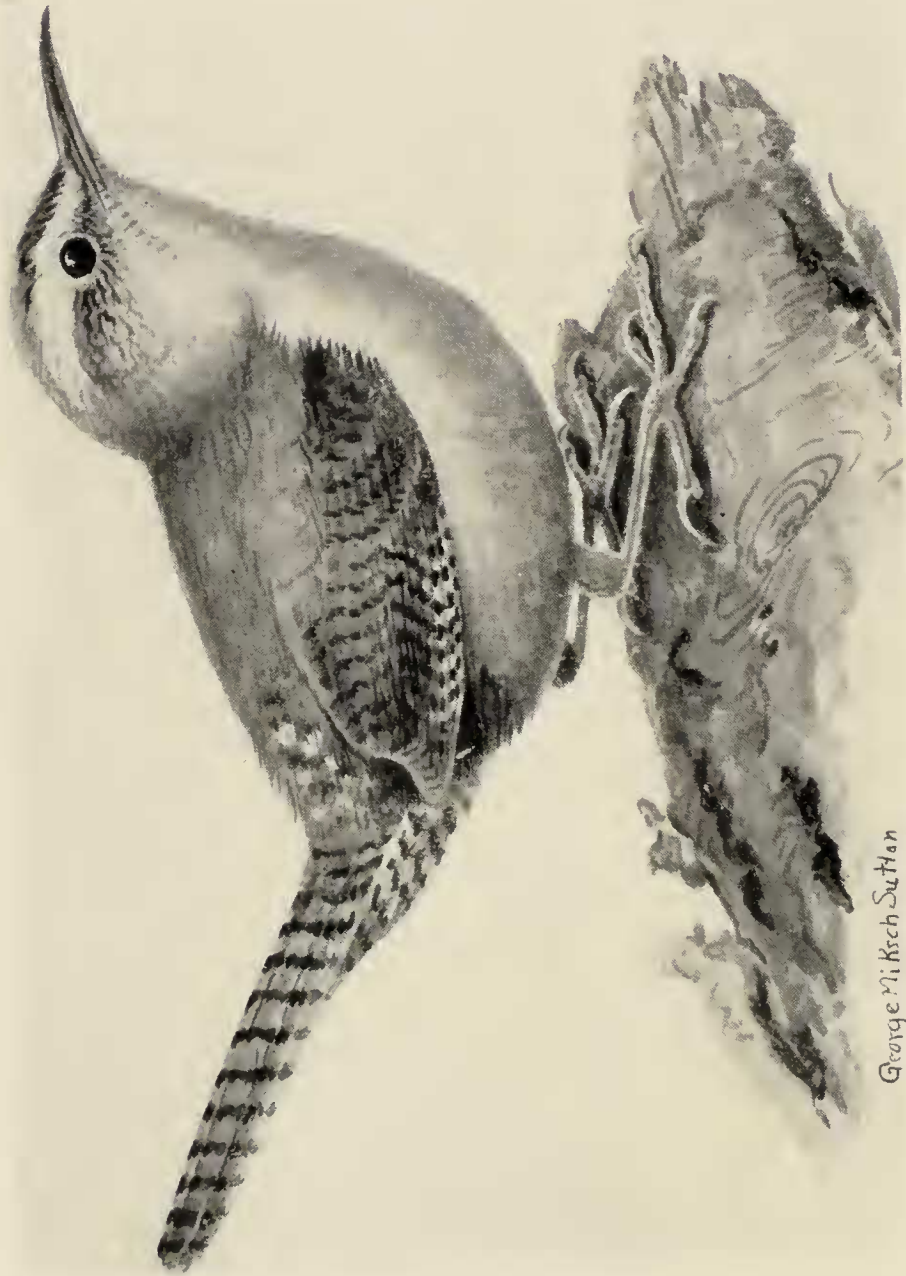
When we first came to Brooke County in July, 1914, the Carolina Wren was fairly common about Bethany. Their loud songs were to be heard all about the village as well as in the wooded ravines nearby. On July 24, 1914, I found a brood of young birds just leaving their nest which was situated among the exposed roots of a walnut tree. During the following winter the species was observed daily. It came regularly to the feeding counters where it was especially fond of black walnut meats. One individual became so tame that it would feed from the hand, and a pair of birds which lived about the house customarily awakened me with their chatter while I was sleeping-out on the open back porch. (See Annotated List of the Birds of Brooke County, West Virginia, *Oologist*, Vol. XXXVII, July, 1920, 77-78).

During 1915 several nests were found, one, containing two fresh eggs, in mid-fall! This nest may have been deserted considerably earlier in the season. During 1916 I found several nests and collected sets of five eggs on April 11 (well incubated) and on May 24 (fresh). The bulky nests were found as a rule in out-buildings, and none was found in the woods far from a human dwelling. One nest was built on a crumpled paper sack which lay on a shelf in a woodshed. So neatly had the nest been built that its roughest foundational material nowhere protruded beyond the edges of the paper. The birds, in coming to their nest, seemed to enjoy the crisp sounds their feet made on the dry paper.

Another nest was built into a space between rafters under the roof of a low, well shaded front porch. Here the sheltered cavity was completely filled with leaves and rubbish which had been dragged in with much ado from all directions. The owners of this house stated that the wrens had nested there for years. The nest proper, however, was obviously new.

A nest found in 1917 was built into the corner of a large dry-goods box which had been nailed to the shadowy back of a barn which stood at the edge of a woodlot about two miles from town. Here, where the birds had chosen a cavity obviously too large to fill, both male and female had brought great quantities of nest material; nevertheless the structure was neat. In front of the nest proper was a crude path of weed-stalks and leaves possibly eighteen inches in length. The entire nest with its approach could be lifted easily, so skilfully were the stalks and leaf stems interwoven.

During 1918, 1919, and 1920, I noted, though I was unable to make careful observations throughout the year, that this wren was



George M. Kisch Sutton

THE CAROLINA WREN (Life Size)

disappearing. During the winter of 1918 and the following spring we did not record the species at all. We were, at first, completely mystified, though we were glad enough to note during May, 1919, that House Wrens were for the first time nesting in the village!

It is difficult to determine the factors which caused the Carolina Wren to retire and the House Wren suddenly to appear. It would seem that the larger Carolina Wren could certainly oust the House Wren at will without much trouble. Is it not possible that the House Wren, eager to extend its range wherever possible, as soon as the larger wren for some reason disappeared, watched for its opportunity to come in and establish itself?

If the House Wren in this region is as vandalistic as it is elsewhere (and there is no reason for supposing that it isn't), then it would seem probable that the Carolina Wren must come in for its share of trouble just as does the Bewick's Wren. The fact that at the present time the Carolina Wren is abundant again, and the House Wren present in considerable numbers in exactly the same territory convinces me, however, that it is possible for these two species to live together without constant friction; and also that, in explaining the disappearance of the Carolina Wren in 1918, 1919, and 1920, we must seek for other causes than the mere advent of the House Wren.

I have observed no tendency on the part of the Carolina Wren to disturb nests of the House Wren or, for that matter, of any other species of bird; nor have I observed any instance of molestation of a Carolina Wren's nest by a House Wren. The relationship between these species is evidently much more satisfactory than between the House Wren and Bewick's Wren, wherein the latter species usually suffers and retreats.

During recent years Carolina Wrens have been more abundant here than at any time within the period of my West Virginia experience. One or more pairs are to be seen or heard at almost any time in the yard. On June 10, 1929, I examined a nest containing five well incubated eggs which had been built on the open top of a chiffonier in a little-used bedroom at a neighbor's house where a window was customarily left open. Here the incubating parent was remarkably tame or brave and permitted considerable intimacy.

The odd vocal duet often given by these birds is amusing. The male, quivering as he hurls out his dominant "chee-whee-dle, chee-whee-dle, chee-whee-dle" or "which jailer, which jailer, which jailer?". lifts his head and drops his tail; usually just before this song outburst is concluded the female gives a long, harsh, scolding call which



sounds very much as though she disapproved in some way of the noisiness of her mate.

#### HOUSE WREN

It is impossible, from the meagre data at hand, to account for the absence of the well-night ubiquitous House Wren at Bethany during



THE HOUSE WREN (Life Size)

the years 1914-1918. It appears offhand, however, that the abundance of the resident Carolina Wren, whose entire population was on hand and, as a rule, nesting, by the time the spring migrant House Wren

arrived, actually might have kept the smaller species from attempting to establish itself. In the spring of 1919, however, when the House Wrens appeared here, they encountered no Carolina Wrens and began nesting at once. In the light of present knowledge concerning the constancy of individual pairs of certain species in nesting within a well defined area we may suppose that these newly arrived House Wrens were year-old birds perhaps seeking their first nesting-site.

There is little conflict between the two species as to nesting-site, of course. The House Wren is a much smaller bird, which prefers to nest in cavities in trees or in nesting boxes. The Carolina Wren prefers lower, darker, and more spacious situations. The House Wren might be a worse enemy of its larger relation than it is were it given to spending more of its time in the shadowy retreats which the Carolina Wren prefers to frequent.

House Wrens now nest in a deserted Downy Woodpecker nest in our yard,<sup>2</sup> while the Carolina Wrens live peacefully in neighbors' out-houses not more than three hundred yards away. The local House Wren population has not increased greatly since 1919, there being only about a dozen pairs of the birds in the village and its environs.

If the Carolina Wren disappeared in 1914 before the House Wren came it is obvious that food supply, natural tendency to wander, or overabundance of some natural enemy caused the disappearance of the larger bird, whereas the coming of the House Wren really had nothing to do with it.

#### BEWICK'S WREN

During the summer of 1921 a pair of these birds<sup>3</sup> attempted to establish themselves at a farm between Bethany and the nearby village of West Liberty. The nest was not discovered and we do not know that a brood was reared. During the following summer none was to be found, though House Wrens, in usual numbers, were found in nearby orchards and Carolina Wrens were common in the vicinity.

It is natural to lay the blame upon the House Wren though it is possible that the Carolina Wren should assume some of the censure. According to my experience in Huntingdon County, Pennsylvania, and that of Mr. Samuel S. Dickey in Greene County, Pennsylvania, I should say that the actual nesting territories of the Carolina and Bewick's Wrens insofar as ideal nesting-sites are concerned, overlap more than do those of the Bewick's Wren and House Wren; so that if either

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<sup>2</sup>We have not erected any nesting-boxes on our place; but all dead trees are preserved for cavity-nesting species.

<sup>3</sup>Apparently unmated individuals have been noted twice.

wren is responsible for ousting the Bewick's Wren in this region it may be the Carolina Wren. The Bewick's Wren seems to be an altogether inoffensive, rather unobtrusive creature though I confess I



BEWICK'S WREN (Life Size)

do not know the bird's personality very well since I have not had opportunity to observe it for long periods at a time.

#### CONCLUSIONS

1. The disappearance of the Carolina Wren during the years 1918-1921 can hardly be laid against the House Wren. Unless inadequate food supply or natural tendency toward wandering is respon-

sible, I should say that over-abundance of some natural enemy was the cause. House cats may have been responsible. Hawks and owls certainly were not, for they have been very rare in this region for years. Black snakes and house snakes may have had a good deal to do with the matter for they are abundant hereabouts and they frequent such situations as are chosen by the Carolina Wren as nesting sites.

2. The House Wren and Carolina Wren may inhabit precisely the same region without friction; but the House Wren and Bewick's Wren, or the Bewick's Wren and Carolina Wren, or all these species, evidently do not. Ecologically speaking the vicinity of Bethany appears to be ideal for the Bewick's Wren, save for the presence of the other two nesting species of the family Troglodytidae.

BETHANY, W. VA.

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## THE FALL MIGRATION OF MOURNING DOVES

BY WILLIAM BREWSTER TABER, JR.

At the suggestion of Mr. Samuel E. Perkins III, I have undertaken the interpretation of migration data of the Mourning Dove, (*Zenaidura macroura*) as revealed by the bird banding method. At the outset I should like to point out that there will be developed theories which these data seem to warrant, and that although the data are apparently sufficiently voluminous to warrant the deduction and statement of these theories, it should be understood that until several more years have elapsed and many hundreds more of doves have been banded it cannot be definitely known that any one of these theories always fits the facts. The method of modern science may be divided into three parts: first, the accumulation of data; second, the statement of the significance of these data; and third, the proof of the theories illustrating this significance by experiment or by the further accumulation of data. It is with the first two parts of the scientific method that this paper deals. Whether or not several of the theories herein developed will be tenable after further evidence is accumulated it remains for the future to disclose.

It is pertinent here to say that the true scientist, ever a seeker of truth, cannot expect a statement of theory or fact to disclose its entire significance. Knowledge of any subject can never be consummated nor final, for as new truths are discovered and new methods of investigation devised, the light of scientific research casts ever changing shadows whose depths must be carefully plumbed, and discovers to the gaze of seekers new high lights of truth, thus throwing an entirely different